DOCUMENT RESUME

ED 424 313 UD 032 576

AUTHOR Shimahara, Erika
TITLE Homogeneous-Ability Grouping: Fourth-Grade Teachers' Rationale and Students' Perceptions.
PUB DATE 1998-04-05
NOTE 67p.; Master's thesis, University of Virginia
PUB TYPE Dissertations/Theses - Masters Theses (042) -- Reports - Research (143) -- Tests/Questionnaires (160)
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Ability; Diversity (Student); Elementary School Students; *Elementary School Teachers; Grade 4; *Homogeneous Grouping; Intermediate Grades; *Mathematics Instruction; Questionnaires; Self Concept; *Student ATtitudes; Student Placement; *Teacher Attitudes; *Track System (Education)

ABSTRACT

Tracking is a predominant method used by American public schools to instruct children of multiple abilities. Tracking has been highly criticized by scholars, however, for its detrimental effects on children's education. This paper investigates practitioners' rationale for using tracking and explores the effects of tracking in the classroom and on students. The study consisted of observations of four fourth-grade classrooms, interviews with their four teachers, and surveys of 30 fourth-grade students in an elementary school in central Virginia. Although these students were grouped into four homerooms, they were taught mathematics in five ability groups. The results partially support the literature that suggests that teachers prefer tracking because it facilitates instruction. Further analysis suggests that tracking may appear to have degenerating effects on children, particularly on their self-perceptions. However, due to the limited scope of the study most of the findings remain inconclusive. Recommendations are proposed for future research of the tracking issue. Appendixes contain the assessment used to place the students in mathematics groups, the teacher interview questions, and the student questionnaire used in the survey. (Contains 11 references.) (SLD)

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ED 424 313

Homogeneous-Ability Grouping: Fourth-grade Teachers' Rationale and Students' Perceptions

University of Virginia
Master's Thesis

Erika Shimahara

April 5, 1998

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UD032574

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Abstract

A predominant method used by American public schools to instruct children of multiple abilities is tracking. Tracking, however, has been highly criticized by scholars for its detrimental effects on children's education. This paper attempts to investigate practitioners' rationale for using tracking and understand the effects of tracking in the classroom and on students. The study consisted of observations of fourth-grade classrooms, interviews with these teachers and surveys of fourth-grade students in an elementary school in central Virginia. The results partially supported the literature that teachers prefer tracking because it facilitates instruction. Further analysis suggested that tracking may appear to have degenerating effects on children, particularly with regard to their self-perceptions. However, due to the limitations of the study, whose scope did not permit extended research, most of the findings remained inconclusive. Recommendations for future research of the tracking issue were proposed.

Introduction

A fourth grade classroom in a central Virginia suburb consists of seventeen students. Two of them receive resource room instruction for reading; two others, who are lower-ability math students, are being considered for special education and evaluated for attention deficit disorder. Another child, who arrived from Japan several months earlier, spends half the school day in an ESOL program. Yet another pair of students has been identified as being gifted: their achievement level is at least a grade level ahead of their classmates. These two children attend a gifted program approximately two hours a week. In sum, nearly half the children in this classroom receive, on a regular basis, some form of non-standardized education that is designed to meet their specific needs.

An academically diverse classroom such as this presents multiple challenges for a teacher. During the course of the year, the teacher of these children is charged with the responsibility of teaching her class the content described in the state's curriculum guidelines. Additional pressure is placed upon her to raise student achievement in such a way that it is reflected in the results of the standardized tests the children will take at the end of the year. To meet expectations then, it is obviously in the teacher's interest to determine the most effective way to transmit content to and promote achievement for her students. How does she accomplish all of this in a classroom of such varying abilities?

One of the state's mandated subjects is math, in which she is expected to cover the following topics according to the 1997 Virginia Standards of Learning: numbers and number sense; computation and estimation; measurement; geometry; probability; statistics; patterns; functions and algebra. Math meets daily, but for only 50

minutes. Given this brief time frame, the teacher of this mixed-ability classroom must address the following concerns: How will she be able to accommodate the ability needs of children who are both gifted and below grade level? Given the mixed-abilities of her students, the teacher will have to anticipate that instruction at any given time will be boring for some, frustratingly difficult for others. How would she sustain the attention of all her students? How would she assess children's learning? How would she assign homework? Would she have to prepare extra homework for the advanced children and less challenging homework for below-average children? Would she have to create multiple level tests to be administered to children according to their ability? As for whole class activities, would it be possible to have engaging class discussion with such mixed abilities? Practically speaking, how will she create multiple lesson plans, homework assignments, and assessment techniques on a daily basis?

The coexistence of children of such varying abilities in a single classroom is not unusual in American public schools, and presents multiple challenges for a teacher. During the course of the year, American teachers are charged with the responsibility of teaching content mandated by the state and/or school district. Additionally they are responsible for raising student achievement in such a way that it is reflected in the results of the standardized tests that the children take at the end of the school year. To meet expectations then, it is critical that teachers develop an effective way to carry out their presumed duties.

A conventional way schools manage multi-ability children is through tracking. Tracking refers to placing students in ability-based or academically homogeneous groups within and across classes (Oakes, 1992). Tracking as a method of facilitating instruction

is, in fact, a pervasive practice in elementary and secondary schools (Hallinan, 1984). Yet, for the most part, the research is highly critical of tracking. While the literature has occasionally been faulted for its methodology, to be discussed in chapter two, it poignantly suggests that tracking can be a harmful practice for most children. Studies have shown that tracking creates and perpetuates social stratification, ethnic differentiation, and hinders learning among children of average to lower abilities. Furthermore, when tracking is practiced, lower to average-ability children are shortchanged in the quality of education they receive: generally, their teachers are newer and not as competent as those of higher ability children. Moreover, lower level children receive less instruction in the classroom than their higher level classmates because their classrooms tend to be more disruptive. So why does tracking prevail? Oakes (1994) suggests that tracking is entrenched in tradition: it has become a conventional practice. At one time, tracking was implemented to address the then-existing educational issues. Over the years, however, its role in school has not been reevaluated nor attuned to contemporary educational concerns. Dar (1985) also suggests that tracking practices are sustained by educators who uphold traditionalist educational philosophies. He contends that practioners are motivated by the belief that teachers' responsibilities are, above all, to transmit content to their students. For these outcome-based teachers, social goals of education are secondary to achievement. Dar's work also discusses how teachers' favorable attitudes towards tracking are imbued by teachers' environment (colleagues, for instance) and the degree to which a school practices tracking. This topic will be discussed further in chapter two.

Whatever the reasons for tracking may be, it is clear that there is a striking chasm between the positions of educational research and practice. Meanwhile, tracking continues to prevail in schools, from elementary through secondary, playing an increasingly influential role in the child's life and future opportunities as he progresses through schooling.

Need

By studying tracked classrooms and comparing them to nontracked classrooms, educators can learn more extensively about how tracking affects student learning and attitudes. Put differently, studies such as these could yield important data about how class structure and composition influences learning processes for children of varying abilities, if at all. Furthermore, assessing teachers' attitudes towards tracking could lead to more knowledge of how tracking affects their perceptions and, by extension, their ability to teach. Likewise, assessing children's' attitudes towards tracking could enhance understanding of how tracking influences their perceptions and receptivity to learn in such environments. Teachers may have a preference for teaching a tracked or nontracked class; likewise, children may be more receptive to learning in one type of classroom over another. The possibility that there are differing views by teachers and students on tracking or that teachers prefer tracking, in spite of evidence which suggests that it has negative consequences on children, would call for critical reform of tracking practices.

Purpose

The purpose of this study was twofold: the first was to attempt to understand teachers' rationale for using tracking. More specifically: Why do teachers use tracking?; What are the perceived advantages and disadvantages of it?; and Is it effective? These inquiries, by extension, led to an exploration of students' attitudes towards tracking, giving rise to the second part of the study's purpose, to assess children's perceptions of tracking. How do children feel about being placed in ability-grouped classrooms?; Do they have preferences for which classes they would like to be in?; and How do their tracked classes affect their self-perceptions and motivation to learn? The study tried to investigate these various tracking issues and understand their educational implications.

Terminology

A description of terms as they are used in this paper are in order before further discussion:

Tracking refers to the practice of assigning children *within the same grade level* to classes according to their ability as assessed by test scores and teachers' perceptions. Related terms are: *ability grouping*, *tracked classes*, and *homogeneous grouping* (see below).

Heterogeneous grouping refers to the ability-blind process of assigning children of the same grade level to classes. It is the converse of tracked classes: whereas children in tracked classes are of the same or similar ability, children in heterogeneously grouped classes represent a range of abilities. Two terms which are synonymous with heterogeneous grouping are *non-tracked* and *mixed-ability grouping*.

Homogeneous grouping refers to tracked classes. Specifically, it refers to classes in which the students are grouped according to ability.

Average level refers to children who are considered to be of average achievement or ability in relation to other children in the school of the same grade level.

Lower-level refers to children who are considered to be below-average in achievement or ability in relation to other children in the school of the same grade level. A related term used in this paper is *low-level*.

Lowest-level refers to children who are considered to be among the lowest in academic achievement or ability among grade level peers in the school. It is important to note that this term excludes children who received resource room instruction.

High-level refers to children who are considered to be above-average in achievement or ability in relation to other children in the school of the same grade level.

A related term used in this paper is *higher-level*.

Attitudes refers to affective perceptions. In this paper, this term is used largely in reference to tracking.

Outcome-based or *outcome-oriented* refers to the notion that academic achievement, as measured by standardized tests scores and classroom performance, is the primary interest of education.

Resource room teacher refers to an instructor hired by the school expressly to teach children identified as having remedial academic needs.

Disruptions refers to off-task interruptions by children which occur during teacher's instruction or classroom discussion.

Rationale refers to the reasons why tracking was perceived as an effective strategy to promote learning.

Hypotheses

An understanding of teachers' rationale for tracking was developed by conducting individual and group interviews with teachers. Students' attitudes were assessed by observation and administering surveys. An assumption of this study was that teachers perceive their primary objective in the classroom to be the transmission of specific content, as is mandated by the state and district. In relation, the first hypotheses of the study was that teachers preferred tracked classes because their perception was that such classes facilitate the achievement of this objective. The second hypothesis was that, as an indirect result of tracking, children who were in the average and lower ability groups were receiving instruction that was below the quality of children in higher groups. The third hypothesis was that the self-perceptions and attitudes towards learning of children in the average and lower ability groups were being affected negatively as a result of tracking.

Overview

The organization of the paper is as follows: chapter two presents a review of the literature on ability grouping, discussing common views about the pros and cons of tracking. In chapter three, methodology and design of this study are detailed. More specifically, explanations of how interviews were conducted, how surveys were administered, and how observations were made are provided. This chapter additionally discusses how the data was interpreted. Chapter four presents the study's findings. Finally, chapter five provides discussion, conclusions of the study and recommendations for further research.

Introduction

Charged with the responsibilities of transmitting content knowledge to children of varying abilities and raising these children's achievement test scores, many schools place students into groups according to ability in order to facilitate instruction. Generally speaking, children are classified into homogeneous ability groups on the basis of their similarity in the standardized measures of intelligence, aptitude, or achievement in a given subject area (Esposito, 1973). For the purpose of this paper, tracking, also referred to as ability grouping or homogeneous grouping, is defined as placing students in ability-based groups within and across classes for selected subjects or in self-contained ability-homogeneous classrooms (Oakes, 1992).

Tracking is, indeed, a prevalent practice that becomes increasingly predominant as students progress through the educational system (Esposito, 1973). In a student's high school years, the track that the student is placed in plays a significant role in the determination of her post-graduate plans, whether it is to go to college, attend vocational school, or pursue other professional alternatives. Not surprisingly, college track students have better opportunities for graduation, college, and occupations than non college-track students (Oakes, 1992). The increased importance that tracking plays as students grow older may explain why most studies on tracking have focused on secondary schools. Nonetheless, ability grouping begins early in a child's life--sometimes at the preschool level. Were this not enough reason for ability grouping at the elementary level to deserve thoughtful examination, ability placements which originate at the elementary level remain unchanged throughout a child's school life, for the most part (Oakes, 1994). This implies that tracking plays an influential role in children's life opportunities from their

elementary years. In other words, tracking potentially designs a blueprint for a child's education and, by extension, her life opportunities, from an early age. Where possible, this paper has drawn upon tracking research based on elementary students. However, since the research on elementary school tracking is limited, the paper makes inferences about elementary school students, teachers, and practices from literature based on secondary school environments.

The pervasiveness and continued proliferation of tracking practices in schools prompts numerous questions about tracking's efficacy and effects on children's educational development: Is tracking effective in facilitating instruction? How does tracking affect achievement levels? Does tracking help teachers meet their educational goals? Do children benefit from homogeneous grouping on a social level? These are questions the forthcoming sections attempt to explore.

Prevalence of Ability Grouping

Differing Perspectives of Practice and Research

While ability grouping is ubiquitous in school systems, there is a strong tide of criticism against it among scholars (Esposito, 1973). Dar (1985) describes the dichotomy between school system educators and researchers:

> Though a gap between educational research and practice is not uncommon, the discrepancy between the empirical findings and the practice of separation by learning ability in schools is remarkable. Surveys of teachers' attitudes in the United States, Sweden, England, and Israel reveal an overall positive opinion of homogeneous classes in their various forms--setting, grouping, streaming, and tracking. In contrast, ample research on the effects of separation

> by learning ability has failed to show any consistent educational advantage. In fact, research has disclosed that it has a negative scholastic and social effect upon students in the lower tracks and, as well, perpetuates cultural, ethnic, and social divisions (p.17).

The polarity between practice and research raises the question: Why does tracking prevail in spite of the evidence? In her 1992 work, Oakes suggests that the reason has much to do with the differences in foci between researchers and practitioners. That is, though the fundamental goal of researchers and practitioners is the same, their *means* of achieving it are different: both groups believe that the overarching objective of education is to foster children's potential to its maximum so that they may help themselves and therefore help others in society. Yet, practitioners tend to be concerned foremost with academic achievement or the transmission of content in the classroom; whereas scholars are interested in a broader range of factors. Specifically, scholars believe that dynamics such as how social values are imbued and the qualitative nature of day-to-day activities in school also play critical roles in the process of attaining educational objectives (Oakes, 1992). The reasons why practitioners and scholars differ in their perceptions may be because they are motivated by different causes: as will be discussed in forthcoming sections, practitioners may feel pressured to perform according to the expectations of such external factors as parents and other community members; scholars, in contrast, may be influenced by the desire to promote idealistically sound initiatives with relatively little regard for their feasibility. In conjunction, it has been suggested by scholars that researchers' shift of focus has evolved, over the past few decades, from outcome-oriented research, almost exclusively concerned with students'

academic achievement, to that of social-learning research, which deals with the investigation of the quality of learning opportunities for student development on a day-to-day basis (Oakes, 1992; Esposito, 1973). Whatever the explanations may be, the assumption, that scholars and practitioners employ different means to achieve common educational goals, may explain why such a chasm between the two exists on the subject of tracking.

Tradition

Another reason Oakes (1992) offers to explain the prevalence of tracking in spite of the research, is the practice's entrenchment in tradition. In other words, tracking has become a conventional practice in education. At one time, tracking was implemented to address the then-existing educational issues. Over the years, however, its role in school has not been reevaluated nor attuned to contemporary educational concerns:

> Tracking, as we noted, like many practices in schools, emerged as a solution to a specific set of educational and social problems at a particular time in history. And, like many such "solutions," it has become part of what is considered to be the ordinary way to conduct schooling. As a result, the practice has continued long after the original problems arose and long after the social context from which the solution has changed considerably. In short, the practice of tracking has become *traditional* (p.15).

Complimenting Oakes' view is Dar's (1985) proposal that tracking practices are sustained by what he calls the "traditional" educational philosophy, referring to the conventional way in which educators view their responsibilities. The goal of "traditional" educational philosophy is foremost, the transmission of content, and the

promotion of scholastic achievement over social outcomes of education. If scholastic achievement is the primary goal of teachers, it is clear why they support ability grouping over heterogeneous grouping. Factors which help to sustain the "traditional" philosophy that Dar refers to are community and administrative influences, and the school environment itself. In his discussion of secondary school, Dar (1985) writes:

> ...both teacher and school have been "continually criticized for their failure to bridge the gap between academic achievement and knowledge accumulation and to contribute to the development of the student's cognitive abilities in out-of-school environments. It is therefore no wonder that teachers tend to stress the knowledge transfer component of their role and to attribute greater importance to scholastic achievement than to other educational goals" (p. 18).

Indeed, as will be discussed, the benefit of tracking is that it allows teachers to focus on instructing children of the same or similar academic level. Due to the mounting pressures that teachers face to deliver content, imposed by the school's curriculum as well as state and district mandates, time is regarded as a precious and limited resource. Generally speaking, then, tracking is perceived by teachers as enhancing their ability to fulfill their perceived goal, which is to transmit content knowledge.

Practice Versus Research

What practitioners find appealing about ability grouping is the perception that it helps make instruction more efficient and effective (Sorensen & Hallinan, 1983). Indeed, in a homogeneous classroom the teacher is, by definition, relieved of having to address the broad-ranging ability needs of children, and hence can devote attention to developing more focused and effective teaching strategies for a single ability group. In relation, teachers feel that children may be able to learn better in homogeneously grouped classes since the content being taught in them is designed to be appropriate to their individual level. In a mixed-ability classroom, the content may be too difficult or easy for some children. Consequently, many practitioners feel that outcome-oriented objectives are more achievable in tracked classrooms because they offer conditions which are more accommodating to children's individual needs.

From administrators' standpoint, tracking is advantageous for similar reasons. Dreeben (1984) explains how the practice is used by them to alleviate issues, largely related to limited resources, which challenge schools in educating their children:

> Given district-level constraints, school administrators establish a time schedule governing the allocation of both time and space, integrate one grade's curriculum with that of the next, and most importantly for this discussion, assign pupils and teachers to classes. It is through class assignment that each teacher is provided with a room full of pupils that has distributional properties: a gender distribution (that might be troublesome in first grade reading if there are many little boys); an age distribution (that might be important if many pupils are young for the grade); and most importantly for beginning reading, a distribution of readiness (or

> aptitude). Ability grouping...is an attempt to deal with the diversity of the ability of the distribution (pp. 72-73).

Ability grouping then, regarded as a means to facilitate learning, serves as an organizational foundation for more efficient and effective instruction by various types of practitioners (Sorensen & Hallinan, 1983).

In addition to the administrative and community influences described above, numerous intrinsic factors of the school environment influence teachers' preconceptions of ability grouping and contribute to the proliferation of its practice. One component of the school environment is colleagues, which include a teacher's co-workers, associates or mentors. Another key factor is socialization. This involves how a teacher is initiated into the school's practices and policies. If teachers who practice proponents of tracking play mentoring roles in socialization of a beginning teacher, she is likely to adopt their teaching philosophies. Relatedly, if tracking is widely used at the teacher's school, she is more likely to use it, and develop a preference for using it herself. Dar (1985) found that teachers who taught in schools with homogeneous grouping tended to favor tracking systems whereas those who taught in heterogeneously grouped environments expressed reservations for homogeneous grouping. Finally, teachers like established routines: if a teacher is accustomed to tracking, she is likely to be in favor of continuing the practice. To sum, Dar (1985) explains:

> As a social and organizational structure, the school itself may also influence teachers' attitudes...On the other hand, it may reflect inertia with respect to a given routine and a conviction built upon one-sided experience. Or it may mirror an adjustment to the school and the socialization of individual teachers, especially

> newcomers, by the existing faculty. Indeed, there is greater support for ability grouping among teachers who have taught in such frameworks than among those who have not. Taking into account that ability grouping, of one sort or another, is part of most educational systems, the majority of teachers will inevitably be exposed to environments which support homogeneity and will be under potential pressure to conform to the associated views (pp. 18-19).

Teacher-centered Attitudes

Another distinct, but important factor which may influence teachers' views towards ability grouping is teacher-centered attitudes. In his explanation of teacher-centered attitudes, Dar (1985) suggests that teachers have a tendency to execute their professional duties in ways which benefit or make it easier for themselves, with relative disregard for their students. That is, rather than delivering their responsibilities with the best interests of the children in mind, teachers do so in ways which accommodate their own needs and circumstances. The reasons for this, which may be because teachers feel overburdened or unappreciated, are beyond the paper's scope. The point, however, is that as a result of teacher-centered attitudes, teachers are at risk of overlooking children's needs. This may explain why teachers are more comfortable with instructional designs such as tracking, which focus on increasing achievement, though it may be at expense of children's other educational needs. If teachers, influenced by teacher-centered attitudes, feel accountable foremost or perhaps singularly for raising achievement, then tracking which facilitates this objective, is a choice method of teaching. In short, teachers may prefer homogenous grouping to heterogeneous grouping, even though it may not be desirable or advantageous for the overall development of children, because: (one), it

facilitates teaching from the instructor's perspective; and (two), because teachers fail to consider children's needs out of self-interest.

Unfavorable Consequences of Tracking

Keeping in mind that the research on ability grouping has been criticized for methodological problems, to be discussed later, the research contrastingly asserts that tracking has profound negative implications for children, socially and academically. In reference to social consequences, the literature contends that since tracking necessarily segregates students by ability, that it invariably segregates students by social classifications as well, such as by gender, socio-economic level and ethnicity. Oakes (1992) argues, for instance, that tracking disproportionately places low-income, non-Asian minorities in low-track classes. Once children are placed into their respective homogenous classes, tracking shortchanges the social status of average to lower-level children while promoting that of higher-level children. Hallinan (1984) argues, for instance, that children are treated differently by both classmates and teachers depending upon which ability groups they are placed in. Since academic status is a component of social status, students who are in higher-ability groups tend to be more popular, while students who are in lower-ability groups are labeled as "slow learners." In short, rather than providing a cohesive, unifying structure to school, tracking perpetuates class-based and ethnic fragmentation. It also engenders social stratification and negative stereotypes.

The negative repercussions of tracking for lower-level children extend to learning conditions as well. Oakes (1992), writes that less qualified, less experienced teachers tend to teach lower groups. In relation, other studies have found that teachers of lower-ability children typically spend less time on lesson plans, and use less interesting materials

(Hallinan, 1984). The research of other scholars (Eder 1981; Hallinan, 1984; and Good & Marshall, 1984) indicates that lower ability classrooms are more apt to have greater disruptions, resulting in less instruction. Another detrimental outcome of the disruptive learning conditions of lower ability classrooms is that it disables children from participating more. Furthermore, Good and Marshall (1984) claim that as a result of this, children in lower groups are more likely to become passive learners. In sum, lower-level classrooms provide fewer opportunities for content learning and the development of cognitive skills.

Studies have also shown that expectations among teachers of lower-level children are generally lower than that of higher-level children, resulting in a self-fulfilling prophecy effect (Eder, 1981; Good & Marshall, 1984). In her study of reading turn violations of elementary school students, Eder (1981) pointed out that while there was a greater number of reading turn disruptions in lower-ability classrooms, the students were reprimanded less often than those in higher groups. In contrast to the higher-level children, then, the lower-level children were not shown better ways of behaving. The obvious implication is that the lower-level children did not receive the same amount or level of instruction as the higher-level children. Hence, by virtue of being in a lower-group or a homogenous group of lower-achieving children, children were deprived of learning the things that they may have been taught in a higher-level or mixed-ability classroom. In short, Eder's study showed that growth opportunities for children placed in lower-level classes were limited by teachers' negative predispositions of the children.

The work of Good and Marshall (1984), corroborates both Eder's (1981) findings, that teachers of lower-ability children have lower expectations for them and Oakes'

(1992) research that lower-quality teachers tend to teach in lower-ability classrooms. Good and Marshall cite a study in which teachers of lower-ability children not only had lower expectations for their students but for themselves as well: "...teachers in low-track classrooms made fewer demands on students and applied less exacting standards both to students' performances as well as to their own teaching" (p. 23). Thus, there is a preponderance of evidence alleging that the quality of teaching and learning in lower-ability classrooms is significantly poorer than that of high-ability classrooms.

Not surprisingly, tracking does seem to help achievement and foster self-esteem among children placed in higher-level groups. However, it does so at the expense of diminishing these attributes among lower groups (Esposito, 1973; Hallinan, 1984). Studies if fact show that among secondary schools show that higher-tracked students benefit academically from the tracking arrangements while average to lower level children do not. Oakes (1992) reports that the reason that higher-ability children perform better is not so much due to the homogeneity of their classes but the enhanced opportunities they receive by virtue of being in higher-level classes.

In sum, the literature argues that tracking negatively impacts education in profound ways: it plays a pivotal role in establishing a kind of social hierarchy in the school; leads to the degeneration of teaching quality; results in unequal learning conditions; perpetuates negative social stigmas; and has shown--to a significant extent--to benefit only higher level children.

Esposito (1973) reminds us that the American educational system serves--ideally--to exemplify egalitarian and democratic principals for the social development of children. He argues, however, due to the reasons discussed, that homogeneous grouping

is a vice to this basic educational goal. Furthermore, he accuses practitioners of implicitly promoting unfair educational conditions for children by virtue of their acquiescence to tracking practices in schools:

> In a very real sense, the extent to which the current practice of ability grouping is permitted to exist in public schools represents the extent to which professional educators and governmental agencies sanction sub-quality education in a setting that is charged with the responsibility of developing each child to his fullest. It would seem that such an expectation is reason enough to put a halt to the practice. That the practice also tends to isolate the children arbitrarily according to ethnic and socio-economic status and to discourage alternative thinking and flexibility in the design of more effective learning environments, compels professionals in government and education to eliminate the practice and turn attention to developing, testing and implementing educational systems which provide the psychostructural foundation to support the development of more effective approaches to instruction (p.177).

The Need for More Research

While considering the preponderance of evidence against tracking, it is necessary, however, to acknowledge how and why it has been criticized. One of the criticisms is that the literature lacks consistent and comparable data. In other words, because the data is so variable, it is not possible to make fair apples-to-apples comparisons of available information. The reason for this is that key experimental variables, such as definitions to describe homogeneous and heterogeneous grouping; means of matching experimental and control groups; and instruments used to assess student achievement, have deviated across studies (Esposito, 1973). As Good and Marshall (1984) point out:

> There are numerous reasons why it is difficult to compare and to integrate studies of ability grouping and teaching. First, the studies vary considerably in scope and purpose. Studies also differ in the number of students, the number of groups, and the size of the classes involved (and sometimes it is impossible to obtain this information)...Simply put, the effect of class homogeneity and/or heterogeneity may be mediated by class size, and in some studies these variables are confounded or unspecified, or both (p.16).

Another shortcoming of the research is that scholars have commonly taken an "all-or-nothing" attitude towards tracking (Good & Marshall, 1984; Noddings, 1989). Noddings' work, which heedfully analyzes and argues for the necessity of both homogeneous and heterogeneous grouping, suggests that an absolutist attitude towards either reflects a lack of careful consideration of the respective methods. She asserts that homogeneous grouping on an ability and social level is appropriate under certain circumstances. One such instance is when children are learning about topics, such as

math, which involves high order thinking such as application, analysis, and synthesis, competition is not constructive in learning. She explains why homogeneous grouping is suitable in these cases:

> If educators believe that intelligence, including mathematical intelligence, is socially constructed and/or that valuable group interactions become internalized as mental operations, then competition would not serve their purposes well. Emphasis should be on discussion, elaboration, and invention rather than accuracy and speed. It seems reasonable that groups organized for higher order tasks should be relatively homogeneous both in achievement and on a measure of sociability so that all members can participate freely and equally (p. 615).

Thus, in a departure from other scholars, Noddings raises an important question about the appropriateness and possible demerits of heterogeneous environments, pointing out that they can perpetuate a competitive atmosphere which may not be conducive towards learning certain topics. Correspondingly, she raises the idea that less competitive, homogeneously grouped settings provide a more stimulating and fittingly supportive environment for the instruction of certain subjects.

Noddings' work notwithstanding, the extent to which the literature as a whole expresses doubt about the merits of tracking is compelling and lends substantial credence to the idea that tracking does in fact prohibit educators from carrying out the objectives of American schooling (Oakes, 1992). Meanwhile, tracking continues to prevail in schools, from elementary through high school, playing an increasingly influential role in the child's life and future opportunities as he progresses through schooling.

Compelling Need

In 1973, Esposito predicted that tracking "is likely to be more widespread in the near future." Indeed, a decade later, Hallinan (1983) wrote that, "groups that are heterogeneous with respect to ability are seldom found." The mere pervasiveness and continued proliferation of tracking practices in schools, in spite of the research, demands closer investigation into tracking's efficacy and its effects. This is especially true of the elementary level where tracking is often initiated. More critically, further studies are needed to determine whether tracking in fact has degenerative effects on certain ability-grouped children. Esposito (1973) reminds us that a paramount goal of the American educational system is "to provide each child with an equal educational opportunity to maximize and develop his potential so that he may benefit himself, and thereby contribute more effectively to the larger society." If the outcomes of tracking include fostering stereotypes and social stratification, and engendering discriminatory learning conditions; or if tracking necessitates the premature assessment of children's abilities and assigns children to classes which indeed limit their future opportunities, then the practice would contradict the basic principals of American education. Such findings would demand policy interventions to curtail tracking or abolish the practice all together.

Given the preponderant research-practice discord, and the acknowledgment that more conclusive studies are needed, perhaps a pertinent question to ask would address teachers' awareness of the current literature against tracking: To what extent are teachers knowledgeable about the evidence against tracking and does it affect their practices? In other words, provided the evidence on tracking provided by the research, what are teachers' rationale for placing children into ability groups (if they do so at all)? If

teachers do in fact use tracked classes, do they chose to have them for some subjects and not for others? Why? In their view, how is tracking effective? Does it serve their purposes? On the other side of the spectrum, how are children affected by the way teachers chose to organize their students for instruction? What do they think about ability grouping? Are they aware that it is taking place? These are questions that were explored in this study, and will be discussed in chapter four. First, this paper turns to a discussion of the study's methodology.

Methodology

Subjects

The subjects of this study consisted of the fourth-grade students and fourth-grade homeroom teachers at Greer Elementary School, public school in suburban Charlottesville, Virginia. Unique to other schools in the district, Greer Elementary has an ethnically diverse student body. Of the 480 enrolled students, 31% were African-American; 4% Asian; 4% Hispanic; and 61% Caucasian. Thirty-eight percent of the children were eligible for free lunch, and among the approximately 67 students in fourth-grade, 11% were eligible for free lunch.

The fourth-grade students were divided among four heterogeneous homerooms. For math class, however, the children were grouped by ability across classes into five groups, based on an assessment that took place at the beginning of the school year. According to the fourth-grade teachers, who made the final placements, two main criteria were used to determine the assignment of math classes: the results of a diagnostic test given at the beginning of the year (see appendix A) and informal recommendations of the students by their third-grade teachers.

Of the five different math groups, the lowest-ability class was a special education group of four students, taught by a resource room teacher. The second lowest, taught by a teacher hereafter referred to as Teacher A, consisted of eleven students. Among these, six were white; three were African-American; two were classified as coming from other ethnic minority backgrounds. Approximately four students were either being considered for or were enrolled in special education programs; one student was in the ESOL program. There were two average-level math classes. One, taught by Teacher B,

contained 16 students, consisting of 11 Caucasians; three African-Americans and three Asians. Five of the children were either in special education programs or being considered for them; one child was in the ESOL program. Teacher C's, class, also an average-level math group, had 17 students: 11 were Caucasian; three were African-American; three were Asian. Two children in this class were regarded as or being considered for special education programs; three students were in the ESOL program. Finally, the highest-level class contained 18 students and was taught by Teacher D. This classroom's breakdown was as follows: fifteen were Caucasian; two were African-American and one was Asian. Among them, approximately nine were considered gifted; and one was in the ESOL program.

The teaching experience of the teachers varied. Teacher B had taught fourth grade for 10 years. However, the three other teachers were fairly new: Teacher A was in her second year of teaching; Teacher C, was in her first year of teaching; and finally, Teacher D, was in her fourth year of teaching. Teachers A and B had attained teacher certifications as part of their bachelor's degree programs in college; Teachers C and D had attained master's degrees in teaching. All four teachers were Caucasian females.

Data Collection Methods

Three different qualitative data collection techniques were used to test the study's hypotheses, introduced in chapter one. The first hypothesis was that the teachers preferred tracked classes because their perception was that tracking facilitated their outcome-oriented objectives. To analyze this, the researcher conducted interviews with teachers (see appendix B). Teachers were interviewed by the researcher following their lessons, or after school, either individually, or with the other teachers participating in the

study. They were asked questions which attempted to elicit information about how the children were grouped; teachers' motivations for grouping children homogeneously; teachers' respective methods of instruction; and class management styles. Interviews also sought to gauge attitudes teachers had about the efficacy of tracking, and general beliefs about homogenous and heterogeneous classrooms.

In an attempt to investigate the second hypothesis, that children who were in the average and lower ability groups were receiving instruction below the quality of that in the highest group, the study used classroom observations. Teachers were specifically observed in an effort to identify idiosyncratic characteristics of each of their classrooms: What kinds of methods of instruction did the teachers use for instruction? Did the teachers use different classroom management strategies from one another? Were the dynamics of the classrooms different across ability levels? How? The answers to these types of questions were explored.

Finally, in an attempt to understand the plausibility of the third hypothesis, surveys were designed for and administered to children. The third hypothesis of the study was that the self-perceptions and attitudes towards learning of children in the average and lower ability groups were being adversely influenced by tracking. Initially, a plan to interview students was developed in an attempt to gather valid and comparable data of their attitudes towards tracking. But this was ultimately dismissed and replaced with surveys due to limitations of time in the study. The researcher had, in fact, on one occasion in February of 1998, attempted to interview three fourth-grade boys, in a group setting, about their math classes. However, upon evaluating the content of the students' responses and realizing the time commitment such interviews would require--not only of

the researcher's but of the children's--the researcher determined that the use of such an instrument was not feasible.

On the other hand, surveys were administered to two homerooms to gauge children's attitudes towards math, in general, and their math classrooms. The survey consisted of twelve questions (see appendix A). Four of the questions required multiple choice answers; the remaining questions asked for short answer responses. Initially, all four fourth-grade teachers agreed to administer the survey to their students. Once they reviewed the survey, however, two of the teachers felt that it was too long and would be too time-consuming to administer. It was their understanding that the survey would contain only three to four questions instead of twelve. Consequently, two teachers, Teachers C and D, refused to administer the survey completely. Teachers were also reluctant to administer questions seven and eight, which asked children about their opinions on how they were placed in their math classes and whether they wished they were assigned to other math classes instead. Of the other two who administered the survey, Teacher A advised her students that questions seven and eight were optional, and Teacher B instructed the children to skip these two questions all together. Teachers A and B administered the surveys to their homeroom classes rather than their math classes.

Procedure

The field work for this study took place in January and February of 1998. Teachers were interviewed either individually, or in a group setting in which Teachers B, C and D were interviewed at once. The interviews were conducted either between classes or after school, and typically lasted between fifteen minutes to half an hour. Teacher A was interviewed twice individually; B and D once individually, and once in a group setting; and Teacher C was interviewed twice individually and once in a group setting.

For the classroom observations, the researcher observed teachers instruct homogeneously grouped math classes for the duration of the fifty-minute period. Since all of the fourth-grade math classes met at the same time, it was not possible to observe several math classes on the same day. Teacher A and D's classrooms were observed once; Teacher B's twice; and Teacher C's three times. All observations were prearranged with the teachers. The researcher also observed Teacher C's classroom during language arts instruction, for a mixed-ability group, on one occasion.

The original intent of the surveys was to administer them to all the children in the fourth-grade in their respective math classes. They were to be completed anonymously and were color coded to identify the math class the respondents belonged to. However, since the teachers were not informed about this, and the teachers ultimately administered the survey in a way unintended by the researcher, it was not possible to identify which math class all of the respondents belonged to. In the end, the two teachers who agreed to distribute the survey did so within their homerooms rather than their math classes. Observing that the surveys were color-coded, Teacher A, instructed her homeroom students to put the initials of their math teachers in the top corners of their surveys. Thus,

for her class, it is possible to identify which math classes the respondents belonged to. It was not possible to do this for Teacher B's class, however.

The teachers were asked to distribute the surveys and instruct the children to complete them anonymously, telling them that they were being conducted as part of a project by an outside researcher. Teachers were also specifically instructed to tell children that the teachers themselves were not going to evaluate the children's responses in order to reassure confidentiality of their responses.

Summary

The purpose of the study, as discussed in chapter one, was to try to understand the reasons for why the fourth-grade teachers at Greer Elementary School used tracking as a means of organizing their students and facilitating instruction. The study also attempted to investigate fourth-grade students' affective behaviors and attitudes towards tracking. To research these issues, several instruments were used in the study: interviews with teachers, both individually and with others who participated in the study; observations of tracked math classrooms; and surveys, which were completed by the students.

Results

Classroom Observations

At face value, the ethnic distribution of the math classes supported findings, discussed in chapter two, that tracking leads to racial segregation and disproportionately assigns non-Asian minorities to the lower-ability groups. Indeed, the highest percentage of non-Asian minorities among the fourth-grade math classes was in the lowest group, at 45%; the second highest percentage was in the average classes, at 27% each; and the highest math group consisted of only 13% non-Asian minority children. With this exception, however, observations of the homogenous math classes did not reveal patterns or definitive findings related to tracking. The reason for this may have had much to do with the limited number of observations of the study. Due to scheduling conflicts of the researcher and teachers, it was, at times, difficult to arrange observations. For instance, on any given day during a two-month time frame, it was not possible to observe a particular teacher's classroom because she was absent from school that day or because the class was out on a field trip. Hence, given the scant number of observations, there was little, if any, evidence to support the study's hypothesis which stated that children who were in the average to low groups were receiving instruction that was below the quality of that in the higher groups, or in this case, highest group. Indeed, there were no observable correlations between the ability levels of each class and the amount of disruptiveness or engagement found in them. In fact, contrary to expectations, the greatest number of disruptions occurred in Teacher C's classroom of average students, rather than Teacher A's, of low ability students. Moreover, the disruptiveness of Teacher C's classroom could have been attributed to factors distinct from the students' ability

level. One factor may have been Teacher C's inexperience as a teacher. Although she had been student-teaching the class since the beginning of the school year, Teacher C had been the class's regular teacher for only two months at the time of observation. Her newness to teaching may have been the reason she was struggling to effectively manage the class. Also, the fact that Teacher C had fully replaced the class's original teacher mid-year may have exacerbated Teacher C's inability to "take charge". An additional reason why her class seemed most disengaged may have been due to the inappropriate placement of the children. That is, some of the children in the class may have found the instruction to be too easy or too difficult based on their ability. This in turn may have engendered disruptive behavior. Other reasons abound which may explain the off-task nature of Teacher C's class: perhaps the content being discussed was unusually challenging on the days of observation; it is also possible that the teacher was not well prepared for class on the days that she was being observed.

Likewise, though Teacher D's class of highest-ability students seemed to have the fewest number of disruptions and most engagement, it is not certain why this was this case. Was it because Teacher D was a popular teacher? Was it because the children in her math class had higher self-concepts of themselves by virtue of being placed in the class? Was it because the subject matter was particularly engaging during the days of observation? Was it because Teacher D was simply more effective in making instruction more interesting to students? Suffice it to say that the limited number of observations of the classes made it difficult to make distinctive characterizations of the classes or teachers to thoroughly explore these questions. It was therefore extremely difficult to draw

relationships between the attributes of each class vis-à-vis their ability levels and to find any support for the study's hypotheses.

Interviews

On the other hand, the interviews with the four teachers supported--at least to a certain extent--the study's hypothesis that teachers preferred tracking because they perceived it as a means to facilitate instruction. This is not to say, however, that the teachers showed adamant support for homogeneous grouping: they did not. In fact, each teacher acknowledged the advantages and disadvantages of both heterogeneous and homogeneous grouping. Still, all four teachers seemed to be in agreement that homogeneous grouping eased the teaching process for numerous reasons. Furthermore, they cited ways in which they felt that tracked classes were beneficial for students. To be sure, teachers varied in their degree of preference towards tracking. Notably, however, or perhaps more telling, was the fact that none of the teachers expressed opposition to the tracking of math classes nor did they point out detrimental aspects of tracking per se. Indeed, no teacher expressed concern about children's views or affective responses towards the groupings. Nor did any teacher allude to the fact that there was a disproportionately small number of non-Asian minorities in the highest group, while such children constituted nearly half the students in the lowest and average classes.

As for the advantages of heterogeneous grouping, Teacher C was most vocal. This may have been due to three specific reasons: first, the researcher interviewed her, individually, one more time than the other three teachers, thereby giving Teacher C more opportunities to express her views. The second reason is that she had completed a teacher education program only several months before. As such, her views may have been influenced by literature presented to her from her program that was favorable towards heterogeneous grouping. In relation, Teacher C may have been speaking as a novice

teacher who, as a result of inexperience, may have had more idealistic or alternative perspectives on education than that of other teachers. Finally, Teacher B may have suspected that the researcher was more predisposed toward the advantages of heterogeneous grouping.

In interviews, Teacher C indicated that heterogeneous grouping allows for such children to "get more," meaning more exposure to content that they might not get if they were in homogeneous classrooms. The reason for this is that in a mixed ability classroom, the teacher must address the accelerated abilities of higher level children. Relatedly, Teacher C implied that in mixed ability classrooms, lower-level children benefit from academically stronger children because they can serve as positive academic role-models for them. Additionally, Teacher C indicated that children's abilities across subjects are often variable, meaning that any given child may be strong in one subject, yet below average in another. To this end, a heterogeneous environment allows such children more chances to excel and be recognized for their achievement. The notion that non-tracked settings give children, particularly those of lower levels, greater opportunities to excel implies that non-tracked settings foster children's ability to achieve and learn, perhaps better than tracked settings.

Teachers as a whole acknowledged that heterogeneous grouping also allows for cooperative learning, a method of instruction which was perceived as advantageous. Cooperative learning, which involves children teaching other children, enables children of varying abilities to work with and learn from one another (Gunter, Estes, Schwab, 1995). One teacher expressed the desire to be able to teach her heterogeneously grouped homeroom for all subjects. "I feel that I don't know my math kids that well," she

explained, implying that if she knew them as well as she did her homeroom students, she would be better able to instruct them. It is fair to speculate, however, a further motivation for this teacher's desire to have her homeroom for all classes: it might simply make it easier for her to plan her lessons. That is, having a single group of students for an entire day may facilitate and cut down on the time required to plan lessons.

Nevertheless, despite the fact that all four teachers expressed advantages of heterogeneous grouping, all teachers appeared satisfied with the arrangement of their math classes. Homogeneous grouping has advantages of its own, according to these teachers. For instance, Teacher B stated that tracked classes made teacher planning easier. When children are at a similar ability level, she explained, it is not necessary to create multiple-level assignments or lesson plans. She also indicated that tracked classes facilitated instruction. A heterogeneously grouped class would include children of such varying abilities that it would be extremely difficult to teach them at once. She said that if children of all levels were in a single classroom, "two kids could teach it [the lesson] and four wouldn't have a clue." In contrast, a homogeneous classroom would allow her to address the instructional needs of children better since they would not be so varied.

In conjunction with this view, Teachers A and D stated that the ability chasm between high and low students was such that lower students would "never catch up" with the higher students, implying that it would be futile to attempt to teach multi-ability children the same content or in the same classroom. All teachers felt tremendous pressure to teach mandated guidelines and stated that given the content that they are required to teach, the tracked classes are more practical and allow teachers to achieve their objectives better. This was particularly true since math period was a brief fifty

minutes long. The teachers also mentioned that though the math classes were considered homogeneous that there was considerable variability within them. Teacher C summed up the teachers' views in her comment that the only difference between the math classes and the others was that in math, "the extremes are less extreme," meaning that the composition of students in math was different from other classes only in that the ability diversity was not as pronounced. Moreover, teachers expressed the necessity to address and accommodate for individual ability levels of the students in the homogeneous classrooms.

Teacher B, the veteran teacher, bluntly stated that she preferred homogeneous classes because they were easier for her to teach precisely because the variability in them was less than in mixed-ability classes. She declared, however, that part of her preference for them was that she was accustomed to teaching that way. Her statement was consistent with Dar's (1985) work, as discussed in chapter two, who contended that teachers are more comfortable teaching with respect to an established routine. At the same time, Teacher B acknowledged the benefits of heterogeneously grouped classes, and expressed a desire to learn more about how to effectively teach them.

While Teacher D indicated that heterogeneously grouped classrooms were probably of greater benefit to children in general, that higher level children clearly benefited from homogeneous classrooms: "High kids can take off with something," she said, meaning that homogeneous classrooms enabled high achieving children greater freedom and encouragement to learn more since they weren't being held up by children of lower abilities.

Teacher B suggested that another reason why the teachers liked the homogeneous math classes was that they provided a change of pace for the teachers and children. In other words, teachers found it refreshing to be with children other than those from their homerooms, and vice versa. She indicated, in fact, that one of the children in her average math class should have been placed in a lower one but wasn't because it would have meant that he would be in his homeroom for most of the day. This particular boy had been disciplined numerous times for misbehaving. As such, teachers had created a list of off-task behaviors for him, which included items such as "drawing" or "talking". If his teachers observed him misbehaving during class, they would check off the appropriate item on the list. The boy carried this list on a clip board and took it with him to his classes to give to his respective teachers. In short, his math placement was viewed by the teachers as an opportunity for him and his homeroom teacher to "get a break from each other." However, this type of arrangement, where a student was placed in a math class for reasons other than ability, seemed unusual: there were several children who remained in their homerooms for math, simply because their homeroom teacher taught the math level that they were assigned to. For the purpose of clarity, it is necessary to qualify the intent of Teacher B's statement that she finds homogeneous grouping to be amenable because it allows teachers to be with different children. Obviously, Teacher B's claim has less to do with her preference for tracking per se than it does with the fact that the homogeneous math classes give her an opportunity to teach different children. In other words, what Teacher B probably meant to say was that she likes to be able to teach children different from the one's in her homeroom and that the homogeneous math groups allow this to happen.

Teachers also expressed the view that the study of math, in particular, lends itself to homogeneous grouping because of its conceptual, sequential quality. Their comments echoed Noddings (1989) work, discussed in chapter three, which suggests that homogeneous groups may be more suitable for instruction involving higher order tasks, such as those in math, because they involve application, analysis, and synthesis. The premise of her argument is that the most suitable settings for certain academic exercises may be noncompetitive or homogenous-ability ones so that children may participate equally.

In sum, one of the main reasons the teachers preferred homogeneous grouping seemed to be motivated by the pressure they felt to teach mandated context. While one teacher provided an unequivocal reason for why homogeneous grouping benefits high level children, and should be practiced for that reason, many of the reasons given by teachers as to why they liked tracked classes had little to do with children, and more to do with the accommodation of teachers, that is, how tracked classes make planning or instruction easier for *them*. These are significant points because they suggest that teachers feel tremendous responsibility to deliver content, and that teachers exhibit teacher-centered attitudes as discussed in chapter three. Whatever the case, the evidence gathered from the interviews supported the hypothesis that teachers preferred tracking because it facilitated their responsibilities as classroom teachers.

As part of the interviews, teachers were also asked about the explanations provided to children as to why math class was different from others, specifically, why they went to different classrooms or had different classmates for math. Their responses shed light upon how they felt about children's knowledge of the tracking taking place. At

the beginning of the year, the children were told that they were divided into groups that would enable them to learn math at a pace that was appropriate for them. They were also told--perhaps so that they would not discover that they were placed in classes according to ability--they would all learn the same material in class, but at a different pace. The teachers indicated that they deliberately refrained from telling the children that the classes were divided by ability or that certain classes would be progressing through content at a faster pace. Teachers' reticence about informing children of how they were grouped strongly suggested that they were concerned about how children would be adversely affected by this knowledge.

Information provided to parents, however, was a different story. Teacher B stated that the parents were told at Back-to-School Night, which took place approximately three weeks from the first day of school, that there were "four homogeneous" math classes and that their children had been placed in them according to their ability. The teachers also assured the parents that the children could be switched into a class that was more appropriate to their level, if need be, at any time during the year. In other words, the placements were not necessarily permanent. In fact, however, as of March, 1998, only three changes had been made out of approximately 60 placements.

Interestingly, when the teachers were asked about children's understanding of the math groupings, they conceded that some children knew that the math classes were arranged by ability. Teacher B guessed that "thirty-five to forty percent" of the children knew about this. She also speculated that the children probably knew which class was the highest among others, but that they probably could not differentiate the levels of the rest of them. In fact, among the eight children who responded to a question in the survey

which asked them why the thought they were assigned to their respective math classes, five indicated that the reason involved ability. However, given the small sample size of responses to this question, it was difficult to draw conclusive evidence about children's overall knowledge of math tracking. It was also not possible to thoroughly analyze how children's potential awareness of tracking affected their self-concepts or attitudes towards school. Were there enough data to form generalizations about these factors, teachers' attitudes towards how they felt about children's knowledge of tracking may have been able to be explored. By extension, teachers' views about other social, affective implications of tracking upon children could possibly have been analyzed.

Survey Results

As noted in chapter three, the original intent of the study was to have all of the fourth-grade students complete a survey to assess their attitudes and knowledge of tracking. However, since two of the four teachers ultimately declined to administer the surveys, there were only two classrooms of students who responded to the survey, reducing the sample size to less than half, precisely thirty. More fundamentally, only eight children responded to two of the questions (numbers seven and eight) posed specifically to assess children's understanding and attitudes of their particular math placements. The reason for the small number was that one of the two teachers who agreed to administer the survey advised her students that these questions were not to be answered; and the other teacher instructed her students that the questions were optional. Teacher B, who was the principal contact for this study, indicated that she and the other teacher were "not comfortable" with questions seven and eight. She explained that they felt the questions drew attention to the tracked method by which children were organized

into classes. "We don't want them to know about that [they were grouped by ability]," explained Teacher B. As a result of these multiple unanticipated issues, the data collection was severely limited, and this in turn made it very difficult to analyze results in a conclusive manner, much less the study's hypothesis that children's self-perceptions and attitudes were being affected negatively as a result of tracking.

Nevertheless, it is worth noting that the eight children who responded to questions seven and eight did indeed reflect attitudes about tracking. In response to question seven, which asks, "Why do you think you were assigned to your math class instead of another math class?" one female student wrote: "Because I'm not the smartest [sic] I'm in the second to highest math class." A male student wrote, "Because of my skill." Another female child indicated that she wished that she were in Teacher D's math class, which was the highest: "I wish I were in Ms. D's [sic] class," she wrote, explaining that it would make her feel "smart." The revealing quality of the responses suggests that the survey may have been an effective instrument to measure children's attitudes towards tracking had all four math teachers administered the survey.

The other questions on the survey were more general in nature. Not surprisingly, they generated less informative answers about children's attitudes specific to tracking issues. For instance, question number four asked, "Please say why you feel the way you do about math class." Forty percent responded simply by saying that math was "fun". For question number six, which asked: "What do you like best about your math class?" Thirteen out of thirty respondents indicated that they liked playing games the best.

Given teachers' circumspection of questions seven and eight of the survey, and more broadly, their desire to downplay or conceal the manner in which children have

been grouped into math classes, it is difficult to know how the survey may have been designed to elicit more illuminating responses from the children. Another instrument, interviewing, may have been an alternative means to assess this concept. Based on the interview that was given to three children (discussed in chapter three), it is fair to say that interviews would have permitted the researcher to ask more pointed questions to children since the interviews took place out of the sight of the teachers. To this extent, it may have been possible to have obtained more relevant and candid information from the students which may have provided more evidence in support of (or against) the hypotheses in this study. Given the time limitations of this project, however, it is uncertain how much substantial data could have been accumulated by using this instrument.

Discussion

The evidence asserts that tracking creates an educational environment that is antithetical to the purposes of American education: it engenders social stratification and stereotypical attitudes in schools, and results in unequal and unfair learning conditions for children, harming average to lower-level children the most. Yet, tracking is tremendously popular in schools. As a means for managing the academic diversity of children, administrators and teachers view tracking as an effective vehicle to deliver educational objectives. With intense pressure from society to inculcate children with content knowledge and raise test scores, schools have become highly outcome-oriented, that is, concerned foremost--perhaps singularly--with elevating the standards of achievement among children. Various other reasons were provided in this paper to explain why tracking continues to proliferate in schools. These included: the acceptance and adherence of traditional practices; teacher socialization, in which conventions are passed from one generation of teachers to the next; and teacher-centered attitudes in which teachers' behavior is motivated largely by their own needs rather than their students'.

Given multiple explanations for why teachers prefer tracking, the paper explored reasons for why such a polarization of views exists between practitioners and scholars. A main reason cited was that scholars and practitioners' goals may be different. In contrast to practitioners, scholars have focused not so much on outcome-oriented goals of education, but how education affects children on a day-to-day basis, more specifically, on a psycho-sociological level as well as an academic level. As previously noted, it is nevertheless important to note that the fundamental objectives of scholars and

practitioners are ultimately congruent. That is, both groups are interested in benefiting children so that they may ultimately become good members of society.

Recommendations for Future Study

It is in the best interests of education that scholars and practitioners join forces on the tracking issue. Both scholars' and practitioners' awareness, that they ultimately have the same fundamental goals, is a good place to start. This knowledge would encourage scholars and practitioners to become informed about the other's perspectives. In turn, this might generate cooperation between the two and lead to the development of more effective or mutually compatible strategies to attain education goals. More specifically, scholars need to remain cognizant of the demands placed on practitioners to achieve outcome oriented results; practitioners need to consider that education has further-reaching implications than simply academic achievement. Furthermore, scholars to establish policy recommendations which clearly address and articulate real-life needs of practitioners; and practitioners need to be more open to them.

The Need for More Research

Another factor which may bring closer the views of scholars and practitioners is further research in the field. As previously discussed, the need for more extensive study is obvious. This is particularly true of the elementary level, as most of the research on tracking is based on secondary-school studies. If tracking begins as early as elementary school, and the placements of children, in fact, tend to be stable as scholars indicate, there is an evident necessity for further research at this level. The kind of research needed, as noted by Mosteller and fellow scholars (1996) are longer term studies, similar in purpose, which would allow researchers to study the issue in depth. It is fair to say that this study

may have benefited from such prolonged research. As pointed out in chapter four, for instance, the ability to have been able to spend more time at the school to observe teachers and students, in multiple environments, may have enhanced the overall quality of the data collected. Had the researcher been able to do this, she may have been able to develop more trusting relationships with the teachers, which may have resulted in several favorable outcomes: the teachers may have been more supportive in allowing her to administer her survey in its entirety; the researcher may have had greater opportunities to ask teachers more specific questions during interviews; and the researcher may have been able to obtain more candid and thoughtful responses from teachers. This study found that teachers were reticent about informing children about how they were placed into their math classes. A lengthier study allowing greater access to teachers as described, may have facilitated the researcher's ability to explore why this was the case.

Additionally, such a study also may have permitted more classroom observations. This would have enriched the data collection because the researcher could identify whether the teachers taught tracked classes differently from non-tracked classes. More specifically, an extended study would also have allowed the researcher to gather more data about each teacher's individual styles, and the characteristics of her hetero- and homogeneous classrooms. When the teacher addresses a homogeneous group, versus a heterogeneous one, does her attitude change? Does she use different management tactics and if so, why? Do her expectations for the children change? Does she put in similar degrees of effort in teaching non-tracked classes as she does tracked classes? Issues such as these, which compare teachers' behaviors and characteristics across and within classes, may have been explored with additional observations. By extension, such observations

may have permitted more contextual and meaningful--rather than superficial--interpretations of the data presented in the study's results, such as the ethnic distribution of the math classes, which at face-value supported the tracking literature. Finally, a more drawn-out study may have permitted the interviewing of students. This would have significantly enriched the quality of data about students' perspectives and attitudes towards tracking.

In sum, prolonged engagement would have helped to bolster the credibility of the study's findings. Moreover, such a study would have produced more descriptive data and thereby made it possible to make fairer assessments about tracking. To be sure, a study of this nature would have involved greater cooperation from teachers, administrators, students and parents, who had little or no involvement in this study. However, a longer term study is strongly recommended in order to learn more about the efficacy of tracking and how it affects children, on both an instructive and affective level. In fact, several large scale studies, which aim to address these questions, need to be undertaken to enable researchers to identify patterns and generalizations in order to, ultimately, present information about tracking which is credible, unequivocal and leads to more desirable educational outcomes.

The Need for Child-Centered Studies

Finally, future studies should focus on the attitudes of children--the recipients of education--towards tracking. How do children feel about being assigned to classes by ability? How does this influence their attitudes towards school and learning? How, ultimately, do tracked classes affect their self-esteem and their perceived ability to succeed? These are issues of critical importance. It was not possible to make fair

conclusions about the survey results in this study since there were an insignificant number of respondents. However, it was possible to speculate what those responses may have been based on those who did respond. Among the students who answered questions specifically designed to assess attitudes about tracking, many indicated an evident understanding of how they were placed in their respective tracked math classes. The fact that children possessed knowledge of *how* they were placed in their classes demanded attention to how they felt about their placements. More specifically it prompted the question: how were children's self-perceptions affected by the placements?

Esposito (1973) reminds us that the purpose of school is to maximize a child's abilities so that she can help herself and therefore help others. If placing a child in a lower-ability class results in the deterioration of her self-esteem and further, in apathy or hostility towards learning, then clearly, the school has failed to do its job. One of the respondents of this study's survey was a fourth-grade girl who chose to respond to two questions on the survey which her homeroom teacher clearly indicated were optional. For the first of the two questions, the student indicated that she wished that she had Teacher D, who taught the highest-level math class, instead of her own teacher, who taught an average-level class. In the next response, she wrote that she wished that she were in Teacher D's math class because it would make her feel "smart." Her responses raise the poignant issue of how tracking affects self-perceptions, in this case, injuriously. The possibility that tracking can have a negative impact on children's self-esteem, as early as the elementary level, underscores perhaps the most egregious consequence of the practice in schools. To the extent that such a potential exists, indeed contradicting a fundamental doctrine of American education, further attention to the issue is essential--in

both research and practice. This is especially true of the elementary level, where there is a particular dearth of literature. If educators are using, at magnitude, a practice which degenerates children's self-confidence, and children's desire to learn and develop into self-motivated citizens, then we are committing a flagrant injustice to the children in our schools.

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Appendix A

Name:____
Date:____

FOURTH GRADE
MATH ASSESSMENT

I. Add.

① 7	② 365	③ 1072	④ 1279
+ 15	+469	+ 513	+ 685

II. Word Problems. Show your work when needed.

⑤ What number comes after 17+8? _____

⑥ Which number is greater . . . 21+11 or 20+14?
_____

⑦ Linda's mom made 2 dozen cookies. She told Linda and her cousins not to eat more than half the cookies. How many could they eat?

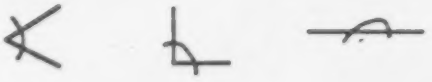
⑧ If Linda ate 4 cookies, Michael ate 3, Caroline ate 6, and Kelsey ate 2, did they eat more than half the cookies? _____ Explain your answer.

III.

(9) What is the area of this square? _____

(10) What is the perimeter of the same square? _____

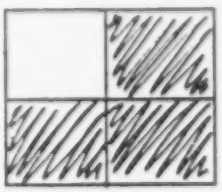
(11) Draw parallel lines:

(12) Which is a 180 angle? 
(Circle your answer)

(13) Which is longer? (Circle one answer for each letter)

A. mile or kilometer
B. inch or centimeter
C. yard or meter
D. inch or foot

(14) Which shape represents $\frac{3}{4}$ shaded?

A. 

B.

Shape: _____

IV. Subtract. Show your work when needed.

(15) 9-6=____ (16) 19-7=____ (17) 37-5=____

(18) 1207 - 933 (19) 5522 -4444 (20) 900 - 345

V. Round to the GREATEST place value.

(21) 163 _____

(22) 786 _____

(23) 3,214 _____

(24) 79,635 _____

VI. What is the value of the underlined digit?

(25) 1<u>2</u>0 _____

(26) <u>3</u>47 _____

(27) <u>6</u>,842 _____

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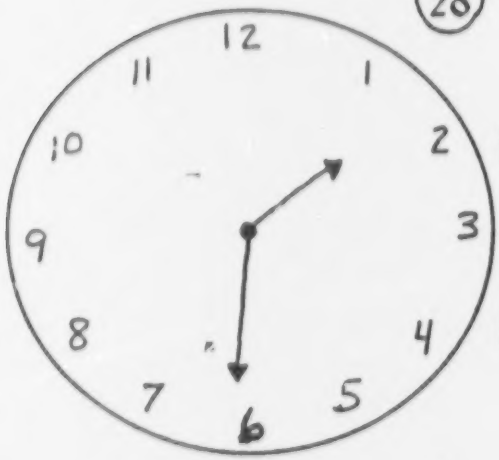
VII. Use the clock to answer questions 28-30.



(28) What time is it? _____

(29) What time will it be in 30 minutes? _____

(30) What time was it 10 minutes ago? _____

VIII. Use the table to answer questions 31-33.

Pets Students Have in 4th Grade	
NAME	NUMBER OF PETS
John	3
Suzie	6
Marvin	1
Ethel	10
Debbie	0

(31) Who has the most pets? _____

(32) Who has more pets, Marvin or Debbie? _____

(33) How many total pets do the students have? _____

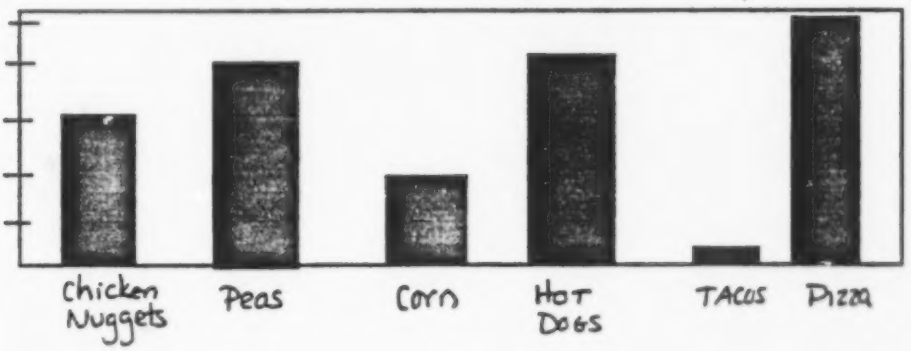
IX. Solve the problems.

(34) $30x2 =$ ____ (35) $9x6 =$ ____ (36) $5x7 =$ ____

(37) $\begin{array}{r} 16 \\ \underline{x\ 3} \end{array}$ (38) $\begin{array}{r} 29 \\ \underline{x\ 3} \end{array}$

X. Using the graph below, answer questions 39-41.

Favorite Foods of Mrs. Lund's Class



(39) Which food does Mrs. Lund's class like the most?

_____

(40) Which food do they like the least? _____

(41) Which food do they like about the same? _____

XI. Divide.

(42) $4\overline{)24}$ (43) $5\overline{)35}$ (44) $7\overline{)42}$

(45) $6\overline{)40}$ (46) $3\overline{)29}$

XII. Add the fractions.

(47) $\frac{1}{4} + \frac{2}{4} =$ (48) $\frac{2}{8} + \frac{3}{8} =$ (49) $\frac{4}{12} + \frac{3}{12} =$

(50) $\frac{2}{6} + \frac{3}{12} =$ (51) $\frac{4}{8} + \frac{2}{16} =$

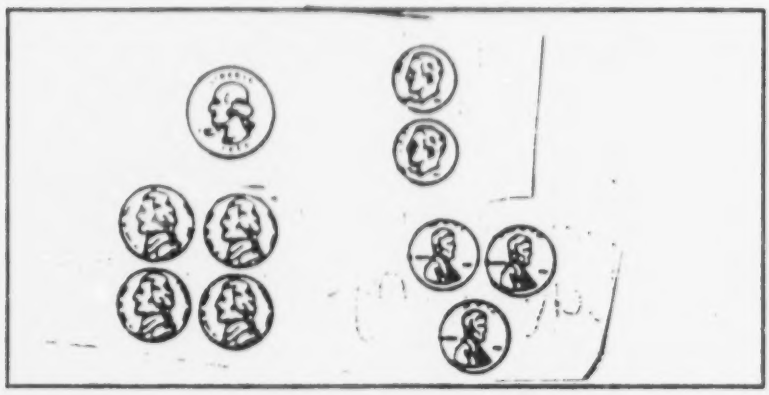
XIII. Subtract the fractions.

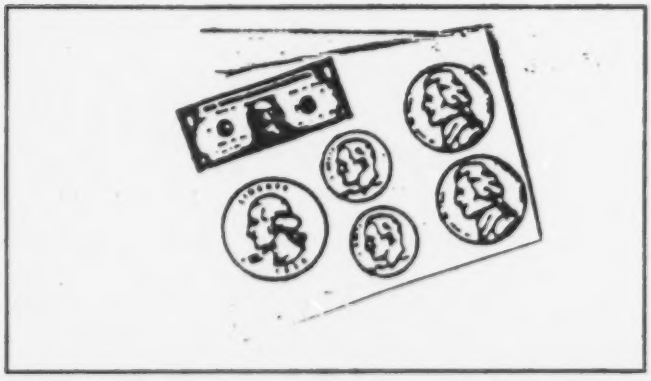
(52) $\frac{7}{9} - \frac{1}{9} =$ (53) $\frac{12}{13} - \frac{5}{13} =$ (54) $\frac{7}{8} - \frac{2}{8} =$

XIV. Add the decimals.

(55) $\begin{array}{r} .21 \\ +.75 \\ \hline \end{array}$ (56) $\begin{array}{r} 1.12 \\ +\ .75 \\ \hline \end{array}$ (57) $2.35 + .47 =$

XV. Write the amount of money in the pictures.

58  =_____

59  =_____

XVI. Choose from the word bank below and name the shape.

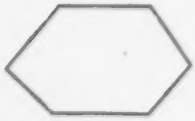
Triangle	square	hexagon	rectangle
Trapezoid	circle	octagon	diamond

60

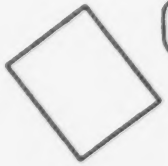
61

62

63

64 

65

66 

67

XVII. Word Problems.

(68) Tyler went shopping with $5.00. He wanted to buy gum for $1.19 and Power Rangers for $2.57. How much change will Tyler receive? Show all your work.

(69) Write the number six million, three hundred twenty-five thousand, seven hundred three.

_____

(70) Write an addition sentence to show that $6 \times 7 = 42$.

Congratulations!!! You're done.

Appendix B

Questions Asked of Teachers During Interviews

The questions asked of the teachers were not always uniform. In a typical interview, the researcher began with a question about teachers' perceptions of tracking, such as, "What do you see are the advantages of homogeneous grouping?" Or, she would inquire about a particular aspect of a teacher's class such as, "How do the children perform in your class, overall?" The researcher would then ask several follow-up questions, which often directly related to the teachers' responses. Since the questions asked during each interview varied and were not always pre-arranged or recorded, it was difficult to compile a comprehensive list of them. The following, however, presents a partial listing of the types of questions asked to individual, but not necessary all participating teachers.

How would you define the objective of ability grouping?

How were the children divided up into the math groups?

What did the assessment consist of?

Are the children indeed grouped according to the rationale? Did the students in each class score similarly in the exams, in fact?

At the beginning of the year, what explanation is given to students about the groups? Are parents also informed?

Why is math the only class that is homogeneous? Why isn't reading arranged by ability?

Who determined that math class should be homogeneous?

What is it that you are required to teach during the course of the year in math?

How many children are in your class?

How many minority children are in the class, and what kind of minorities do they represent?

What do you see are advantages and disadvantages to homogeneous and heterogeneous grouping?

Do you think that the children know how they were placed into their math classes?

Given advantages of homogeneous classrooms, do you find them easier to teach?

Do the children turn in their homework on time?

What were the results of the homework?

How do the children perform in the class? Are there certain children who are struggling?

How are the children seated? Do you have assigned seating?

Do you have the same class management policy for your other classes as you do in math?

Appendix C

Survey

1. Are you are male or female. (Please put a check next to your response.)

____Male ____ Female

2. Do you like any of the following classes? If so, put checks next to the ones you like.

___ Language Arts ____ Social Studies

___ Math ____ Science

3. How do you feel about the math class you are in? Check one.

_____ I like it a lot. ____ I kind of like it. _____ It's OK.

_____ I don't like my math class.

4. Please say why you feel the way you do about math class.

_____

_____

_____

5. If you like math class, what are the things you like about it? (You can put more than one check.)

____ Activities _____ My teacher ____ The stuff we learn.

____ Homework _____ The other kids in the class. ____ It makes me feel smart.

6. What do you like best about your math class?

_____

_____

7. Why do you think you were assigned to your math class instead of another math class?

8. Do you wish that you were in another math class? Why?

9. Is there anything you dislike about your math class? What?

10. Finish the sentence: *I wish math class was...*

11. Would you change something about your math class if you could? What would it be?

12. How is your math class different from the other math classes?

_____

_____

_____